

REMARKS

Applicant submits the present *Amendment* in response to the Office Action mailed May 1, 2008. Applicant sincerely appreciates the thorough review of the present application. In response to the Office Action, Applicant has amended Claims 28-30 to address the rejections under 35 U.S.C. § 112. For the reasons discussed below, Applicant respectfully submits that the pending claims are all in condition for allowance.

I. The Rejections Under 35 U.S.C. § 112

Claims 28-30 stand rejected under 35 U.S.C. § 112, ¶ 2 as being indefinite based on antecedent basis informalities. Applicant appreciates the Examiner's thorough review of these claims and the Examiner calling these informalities to Applicant's attention. Applicant has amended Claims 28-30 to address each of the informalities identified in the Office Action, thereby overcoming the rejections under 35 U.S.C. § 112.

II. The Rejections Under 35 U.S.C. § 103

Claims 1-27 and 29-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,580,704 to Wellig et al. ("Wellig") in view of U.S. Patent No. 5,666,661 to Grube et al. ("Grube"). Claim 28 stands rejected as being unpatentable over Wellig. Applicant respectfully traverses these rejections for the reasons discussed below.

A. Independent Claim 1

Independent Claim 1 recites:

1. A method of establishing communications between a first station and a second station in a wireless local area network using a direct link protocol, comprising:

determining a first distance between the first station and the second station;

determining a second distance between the first station and an access point in the wireless local area network;

comparing the first distance to the second distance; and

establishing direct link protocol communications between the first station and the second station if the first distance is less than the second distance.

The Office Action states that Wellig discloses a method of establishing communications between a first station and a second station in a wireless local area network using a direct link

protocol by checking the received signal strength between the first and second stations and using that received signal strength to determine a distance between the first and second stations. The Office Action further states that Grube discloses establishing direct mode communications between a first station and a second station based on a comparison of the distance between the first and second stations to a threshold. Finally, the Office Action states that one of skill in the art would have been motivated to adapt the methodology of Grube into Wellig, and to further revise such a modified version of Wellig to arrive at the method of Claim 1. Applicant respectfully traverses the rejection of Claim 1 for at least the following four reasons.

First, it is beyond dispute that neither of the cited references discloses "determining a second distance between the first station and an access point in the wireless local area network" as is recited in Claim 1. In fact, the Office Action expressly concedes that Wellig does not include any such teaching (*see* Office Action at 4), and it is clear that Grube likewise does not disclose or suggest determining the distance between a station and an access point, as Grube only discusses determining a distance between two communication units. Thus, the Office Action has failed to identify anything in the prior art that suggests this step of Claim 1 and, as such, the rejection of Claim 1 should be withdrawn for this reason.

Second, it is also clear that neither of the cited references disclose or suggest "comparing the first distance to the second distance" as is further recited in Claim 1, where the first distance is the distance between two stations and the second distance is the distance between one of the stations and an access point. Instead, Wellig does not discuss any kind of comparison involving distances, and Grube only discloses comparing a first distance to a predetermined threshold. Thus, the failure of the cited art to disclose or suggest the "comparing the first distance to the second distance" recitation of Claim 1 provides a second, independent reason for withdrawal of the rejection of Claim 1.

Third, neither of the cited references disclose "establishing direct link protocol communications between the first station and the second station **if the first distance is less than the second distance,**" as is recited in the last clause of Claim 1. Instead, Grube compares the distance between communication units to a predetermined threshold such as, for example, the direct mode transmission range of the units. (*See* Grube at Col. 3, lines 17-28). Neither cited reference suggests establishing direct link protocol communications based

on comparing the relevant distances between the two stations that are to communicate and the distance between one of the stations and an access point. Accordingly, the rejection of Claim 1 should also be withdrawn for this reason.

Fourth, Applicant also respectfully submits that one of skill in the art would not have combined Wellig and Grube in the manner suggested in the pending rejection. In particular, Wellig discloses a technique where the received signal strength between two terminals that may initiate direct mode communications is determined. Nothing in either reference suggests modifying Wellig to use a distance between two terminals instead. Moreover, even were Wellig and Grube combined in the manner claimed in the Office Action, it is clear that any such combination is very different from the invention of Claim 1. In particular, such a combination would not (1) determine a "second distance" between one of the stations and an access point, (2) compare the distance between the two stations to this second distance or (3) establish direct link protocol communications if the distance between the two stations is less than the second distance. In fact, it appears that both Wellig and Grube would establish communications whenever possible (i.e., whenever the distance determined in Grube is less than the threshold or whenever the received signal strength of Wellig is acceptable), whereas according to the method of Claim 1 communications would generally not always be initiated in such circumstances. As such, both Grube and Wellig teach away from the invention of Claim 1 in this sense, and the Office Action fails to identify anything that would suggest the distinctly different approach of Claim 1.

B. The Rejections of Claims 2-15

Claims 2-15 each depend from Claim 1 and hence are patentable over the cited art at least as depending from a patentable base claim. In addition, Applicant respectfully submits that Claims 2-3, 5-7, 9-10, 12 and 14 are independently patentable over the cited art.

In particular, Claim 2 recites "establishing direct link protocol communications between the first station and the second station if the first distance is less than a predetermined multiple of the second distance." Claim 3 recites that "the predetermined multiple is two." The Office Action states that it would have been obvious to further modify the method of Wellig, as modified by Grube, as further modified as indicated in the rejection of Claim 1 to arrive at the methods of Claims 2 and 3. The Office Action fails to cite to any support in the prior art for this assertion, but instead simply states that the subject matter of

Claims 2 and 3 would have been obvious. Applicant respectfully submits that this is insufficient to support a rejection under 35 U.S.C. § 103, and that the rejection of Claims 2 and 3 should thus be withdrawn for this independent reason.

Claims 5-7 each recite, among other things, that the location of the first and second stations are transmitted to the access point. The Office Action states that Grube discloses this feature of Claims 5-7 at Col. 3, lines 1-17. While Grube does indicate that the communication resource controller of Grube "determined a distance relationship between the communication units" from "the geographic coordinates of the units' location," Grube does not specify how the communication resource controller obtains such geographic coordinates. As such, Applicant respectfully submits that Grube does not expressly disclose the subject matter of Claims 5-7 (and includes no discussion whatsoever of the "periodic" or "polling" techniques of Claims 6 and 7), providing independent grounds for withdrawal of the rejections of Claims 5-7.

Claims 9-10 and 12 discuss specific frame characteristics that may be used in embodiments of the present invention. Claim 14 recites that "the location of the first station and the location of the second station that are transmitted to the access point are represented in spatial coordinates." The Office Action states that it would have been obvious to further modify the method Wellig, as modified by Grube and further modified in the rejections to arrive at the methods of Claims 9-10, 12 and 14. The Office Action fails to cite to any support in the prior art for this assertion, but instead relies on conclusory assertions that the subject matter of Claims 9-10, 12 and 14 would have been obvious. Applicant respectfully submits that this is insufficient to support a rejection under 35 U.S.C. § 103, and that the rejection of Claims 9-10, 12 and 14 should thus be withdrawn for this independent reason.

C. The Rejection of Claims 16-23

Independent Claim 16 recites:

16. A method of determining whether to route communications between a first station and a second station in a wireless local area network using a direct link protocol, comprising:

determining a distance between the first station and the second station;

determining a distance between the first station and an access point in the wireless area network; and

determining whether to route communications between the first station and the second station in the wireless local area network using the direct link protocol based at least in part on the determined distances.

The Office Action rejects Claim 16 on essentially the same rationale, discussed above, that is used to reject independent Claim 1. Applicant respectfully submits, however, that neither of the cited references disclose or suggest (1) "determining a **distance between the first station and an access point**" or (2) "determining whether to route communications between the first station and the second station in the wireless local area network using the direct link protocol **based at least in part on the determined distances.**" as is recited in Claim 16. As such, the rejection of Claim 16 should be withdrawn for at least these reasons.

Claims 17-23 each depend from Claim 16 and hence are patentable over the cited art at least as depending from a patentable base claim. In addition, Applicant respectfully submits that Claims 20 and 21 are independently patentable over the cited art.

In particular, Claims 20 and 21 include recitations similar to Claims 2 and 3. As with the rejections of Claims 2 and 3, Claims 20 and 21 are rejected based on conclusory, unsupported assertions that the subject matter thereof would have been obvious. Such assertions are insufficient to support a rejection under 35 U.S.C. § 103, and hence Claims 20 and 21 are independently patentable over the cited art for this additional reason.

D. The Rejection of Claims 24-27

Independent Claim 24 likewise stands rejected based on the combination of Wellig and Grube. Applicant respectfully submits, however, that neither reference discloses or suggests (1) "a processor that determines . . . a distance between the station and the access point" or (2) that "the processor determines based on the respective distances between the station and the second station in the wireless local area network and between the station and the access point whether to establish direct link protocol communications between the station and the second station in the wireless local area network," as is recited in Claim 24. In fact, as discussed above with respect to the rejection of Claim 1, the cited references teach away from these recitations of Claim 24. As such, the rejection of Claim 24 should be withdrawn for at least these reasons.

Claims 25-27 each depend from Claim 24 and hence are patentable over the cited art at least as depending from a patentable base claim. In addition, Applicant respectfully

submits that Claim 27 is independently patentable over the cited art for reasons substantially similar to the reasons, discussed above, that Claim 2 is patentable over the cited art.

E. The Rejection of Claims 28-30

Independent Claim 28 recites:

28. A method of determining whether to route communications between a first station and a second station in a wireless local area network using a direct link protocol, comprising:

determining a received signal strength of a signal sent between the first station and the second station and a received signal strength of a signal sent from the first station to an access point in the wireless area network; and

determining whether to route communications between the first station and the second station in the wireless local area network using the direct link protocol based at least in part on the determined received signal strengths.

The Office Action states that Claim 28 is unpatentable over Wellig. The Office Action concedes, however, that Wellig fails to disclose or suggest "determining . . . a received signal strength of a signal sent from the first station to an access point" as is recited in Claim 28. Moreover, nothing in Wellig suggests modifying the method of Wellig to include such a step. Applicant also respectfully submits that Wellig fails to disclose or suggest determining whether to route communications between first and second stations based in part on the determined received signal strength of a signal sent from the first station to an access point as is further recited in Claim 28. Thus, Applicant respectfully submits that the cited prior art fails to disclose at least two of the recitations of Claim 28.

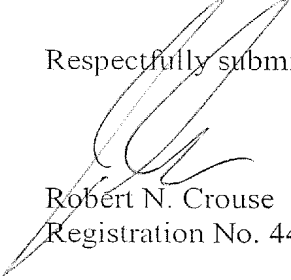
While the Office Action states that it would have been obvious to modify the method of Wellig to arrive at the method of Claim 28, the Office Action fails to provide any support whatsoever for this assertion. Moreover, as discussed above, Wellig in fact teaches away from the method of Claim 28. Thus, Applicant also submits that Claim 28 is patentable over the cited art for at least these reasons.

Claims 29-30 each depend from Claim 28 and hence are patentable over the cited art at least as depending from a patentable base claim. In addition, Applicant respectfully submits that Claim 30 is independently patentable over the cited art as the Office Action fails to identify anything in the prior art teaching the subject matter added by Claim 30.

III. Conclusion

Applicant submits that the claims are patentable for at least the reasons discussed above. Applicant respectfully requests allowance of the claims and passing of the application to issue in due course. Applicant encourages the Examiner to contact the undersigned by telephone to resolve any remaining issues.

Respectfully submitted,

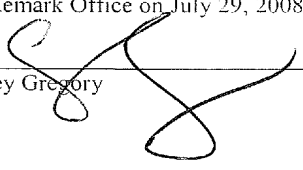


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Carey Gregory